UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,898	10/31/2003	Richard D. Crawford	100110578-1	2974

22879 7590 01/18/2007

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
TAYONG, HELENE E	
ART UNIT	PAPER NUMBER
2112	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,898	CRAWFORD, RICHARD D.	
	Examiner	Art Unit	
	Helene E. Tayong	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *June 06 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 5, 9-19 and 21 are objected to because of the following informalities:

In claims 5 line 1, "wherein" followed by a colon (:), is not required.

In claims 14 line 1, "wherein" followed by a colon (:), is not required.

In claims 21 line 1, "wherein" followed by a colon (:), is not required.

Appropriate correction is required:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5 and 9 - 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) Regarding claims 5 and 14, the phrase "Balanced digital signals" renders the claims indefinite because after reading the specifications, it is unclear if "balanced" refers to "combined digital signal and power ", "balanced transmission" or "equal transmission".

(2) Regarding claim 9, lines 5-6, recites the limitation " the data signals". There is insufficient antecedent basis for the limitation in the claim. It is unclear if this limitation of the claim is intended to refer to "the digital signals" on line 1 of claim 9 or digital control data or some other form of data.

(3) Regarding claim 18, lines 6, recites the limitation "respective interface ". There is insufficient antecedent basis for the limitation in the claim. It is unclear if this limitation of the claim is intended to refer to "the interface" as recited in claim 9.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1- 23 are rejected under35 U.S.C. 102 (b) as being anticipated by Wood (US Patent Number 6178514 B1).

As shown in figures 6, 7, 8 and 11, Wood discloses a method and apparatus for connecting a device to a bus carrying power and a signal comprising:

(1) with regards to claims 1:

first means, (see figure 7, 90, input filter, 92, current sensor, 94, power switch, 98 energy storage, 96 USB Decode/DAC, column 11, lines 46-48) responsive to power (104, figure 7, columns 11, 49-52) and the digital signals(106 figure 7, column 12, lines 36-38) for producing output power and output digital signals having a predetermined polarity and

second means (see figure 7 ,100, Limiter and figure 8 , 100 current limiter, 152 clip detect and filter, 154 voltage controller, columns 16, lines 56-59) for detecting the digital signals having the predetermined polarity output by the first means .

(2) with regards to claims 2:

wherein the digital signals having the predetermined polarity comprise digital audio signals (figure 8, 87, column 12, lines 55-57).

(3) with regards to claims 3:

wherein the digital signals having the predetermined polarity comprise digital audio signals (figure 8, 87, column 12, lines 55-57) and control signals (figure 8, 87, columns 12, lines 39-40).

(4) with regards to claims 4:

wherein the second means comprises a high pass filter (100, limiter, figure 11, 184, columns 21, lines 35-37)

(5) with regards to claims 5:

wherein the digital signals having the predetermined polarity comprise balanced digital signals (figure 8, 70,72, column 9, lines 47-50); and

the second means comprises a differential detector (100, current limiter, figure 8, 152, column 16, lines 56-72).

(6) with regards to claims 6:

wherein the first means comprises a rectifier (94, power converter ,Figure 8, 144, column 15, lines 21-23).

(7) with regards to claims 7:

wherein the rectifier comprises a full wave bridge rectifier (94, power converter, figure 8, 144, column 15, lines 19-21).

(8) with regards to claims 8:

wherein the first means comprises a demultiplexer (100, limiter, figure 8, 152, column 16 lines 56-72).

(9) with regards to claims 9:

a rectifier receiving the power and the digital signals over a single wire pair and producing rectified power and rectified digital signals for setting the polarity to the data signals see figure 7(90, input filter, 92, current sensor, 94, power switch, 98 energy storage, 96 USB Decode/DAC, column 11, lines 46-48) and

a separator for separating the rectified power driving the load from the rectified digital signals controlling output of the load see figure 7 (100, Limiter and figure 8 , 100 current limiter, 152 clip detect and filter, 154 voltage controller, columns 16, lines 56-59).

(10) with regards to claims 10:

wherein the rectified digital signal comprise rectified digital audio signals (figure 8, 87, column 12, lines 55-58) .

(11) with regards to claims 11:

wherein the rectified digital signal comprise rectified digital audio signals (figure 8, 87, column 12, lines 55-58) and control signals (figure 8, 87, columns 12, lines 39-40).

(12) with regards to claims 12:

wherein the load comprises an amplifier (figure 6, 84, 86, column 13, lines17-20)

(13) with regards to claims 13:

wherein the separator comprises a high pass filter (100, limiter, figure 11, 184 columns 21, lines 35-37)

(14) with regards to claims 14:

wherein the rectified digital signals comprise balanced digital signals' signals (figure 8, 70,72, column 9, lines 47-50), and

the separator comprises a differential detector (100, current limiter, figure 8, 152, column 16 lines 56-72).

(15) with regards to claims 15:

wherein the rectifier comprises a full wave bridge rectifier (94, power converter, figure 8, 144, column 15, lines 19-21).

(16) with regards to claims 16:

A speaker including an amplifier energized by rectified power and driven in response to rectified digital signals applied to the amplifier (84 and 86 figure 7, columns 11, lines 29-33),

the rectifier power(figure 7,104 columns 11,lines 49-52) and rectified digital signals(figure 7,106, column 11, lines 58-61) being provided to the speaker (figure 7,86 columns 11, lines 32-33) via the interface (21, figure 7, columns 11,lines 44-46)

(17) with regards to claims 17:

The speaker as recite in claim 16, further comprising a filter network routing the rectified power to the amplifier. (figure 8, 152, column 16, lines 56-59)

(18) with regards to claims 18:

A speaker system comprising first and second speakers, each of the

first and second speakers including an amplifier energized by rectified power and driven in response to rectified digital signals applied to the amplifier, the rectified power and rectified digital signals being provided to each of the speakers via a respective interface as recited in claim 9.

(19) with regards to claims 19:

wherein each of the speakers further comprises a filter network routing the rectified power to a respective amplifier (figure 8, 152, column 16, lines 56-59).

(20) with regards to claims 20:

receiving power and the digital signals at input terminals of a rectifier', (132 and 99, figure 8, columns 14 , lines 29-33).

rectifying both the power and the digital signals to thereby generate rectified power and rectified digital signals output at output terminals of the rectifier', (figure 8, 143, columns 19, 29-32)

coupling the rectified power to power input terminals of the powered load (figure 8, 108, columns 4, 53-56);

generating digital data signals responsive to the rectified digital signals (72,70, 99, figure 8, column 9, lines 47-50) and

applying the digital data signals (72,70, 99, figure 8, column 9, lines 47-50) to signal input terminals of the powered load (84,86, figure 7,columns 11, lines 32-33) to thereby drive the powered load.

(21) with regards to claims 21:

the powered load further comprises a control signal input terminal (95 figure 7, column 12,lines 49-50)

the rectified digital signals comprise the digital data signals and digital control signals'(Figure 7, 87 , columns 12, lines 46-48),

, and

the powered load (84, 86 figure 7 columns 11, lines 32-33) operates on the digital data signals (figure 7, 89, column 9, lines 47-50) under control of the digital control signals(Figure 7,99, columns 12, lines 47-49) applied to the control signal input terminal (Figure 7, 87 columns 12, lines 47-49).

(22) with regards to claims 22:

wherein the digital data signals comprise digital audio signals (figure 8, 87, column 12, lines 55-57).

(23) with regards to claims 23:

wherein the digital data signals comprise digital audio signals (figure 8, 87, column 12, lines 55-57).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wood (US 6178514 B1) discloses an interface of a device to a bus carrying power and a signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene E. Tayong whose telephone number is (571)

270-1675. The examiner can normally be reached on Monday - Friday 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Helene E. Tayong

1/5/07

SHUWANG LIU
SUPERVISORY PATENT EXAMINER